

The opinion in support of the decision being entered today was *not* written for publication in and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* WOLFGANG PETER, DR. BERND EDENHOFER,  
and JAN-WILLEM BOUWMAN

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Appeal 2006-2991  
Application 09/651,797  
Technology Center 1700

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Decided: March 28, 2007

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Before CATHERINE Q. TIMM, JEFFREY T. SMITH and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal from the Examiner's decision rejecting claims 6 and 8-20, the only claims pending in this application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We REVERSE.

## I. APPEALED SUBJECT MATTER

The subject matter on appeal relates to a thermal treatment apparatus including a quenching chamber, a quenching gas circulation assembly, and guide channels that guide the quenching gas past workpieces within the chamber. Claim 6 is illustrative:

6. An apparatus for the thermal treatment of metallic workpieces or a plurality of stacks formed of metallic workpieces arranged one above the other, said apparatus comprising:

a quenching chamber for receiving preheated workpieces and a quenching gas for cooling same;

guide channels each for guiding a directed flow of quenching gas about a respective one of said workpieces or said stacks of said workpieces, wherein each of said guide channels has a closed lateral surface and a length that corresponds at least to a height of the respective individual or stacked ones of said workpieces and each of said guide channels surrounds a respective one of said individual workpieces or said stacks of said workpieces along a direction of flow of said quenching gas such that the respective guide channel guides said quenching gas to flow longitudinally past the respective one of said workpieces or said stacks of said workpieces; and

a quenching gas closed loop circulation assembly associated with said quenching chamber for circulating said quenching gas along a closed loop circulation path through said quenching chamber.

## II. PRIOR ART

The Examiner relies upon the flowing prior art reference as evidence of unpatentability:

Ipsen Indus. Int'l (as translated)      DE G 94/00222.3

Apr. 07, 1994

### III. REJECTION

The Examiner rejects claims 6 and 8-20 under 35 U.S.C. § 103(a) as unpatentable over Ipsen.

### IV. DISCUSSION

In deciding this appeal, we consider the issues as presented in the Examiner's Answer (mailed April 10, 2006), and Appellants' Substitute Brief (filed February 10, 2006) and Reply Brief (filed May 5, 2006).

#### A. Issue

The Examiner finds that Ipsen describes the cooling plates shown in Figure 1 as "formed to a contour of workpiece loads such as a tunnel." (Answer 4).

Appellants contend that, contrary to the findings of the Examiner, the cooling plates (11) of Ipsen are not guide channels having "a closed lateral surface" which "surrounds a respective ... individual workpiece" as claimed (Br. 9-10 and Reply Br. 5-6).

The dispositive issue is: Has the Examiner shown by a preponderance of the evidence that Ipsen teaches or suggests guide channels as claimed to one of ordinary skill in the art?

#### B. Facts

The following facts are relevant to the analysis of the issue to be decided.

All of the claims require guide channels having a closed lateral surface, each of the guide channels surrounding a respective one of individual workpieces or stack of the workpieces (claim 6) or being disposable in surrounding relationship around a respective one of the workpieces (Claim 17).

The Specification explains that guide channels 30 have a closed lateral surface and enclose the workpieces 20 (Specification 9:13-17). Two embodiments

are described: (1) a coherent, matrix-like system of channels 31 as illustrated in Figures 3 and 3a; and (2) individual hollow cylinders 32, 33 as shown in Figure 4 and 4a (Specification 9:17-10:1). Figures 3, 3a, 4, and 4a provide top and side views of the guide channels. These views clearly show the channels as laterally closed and surrounding the individual workpieces on all lateral sides.

Ipsen describes a multiple-chamber furnace with at least one heating chamber and a cooling chamber (Ipsen, p. 2, ll. 2-5). A cross-section of one embodiment of the cooling chamber is depicted in Figure 1 (Ipsen, p. 5, ll. 4-6). Cooling plates 11 can be arranged so they lie opposite the large workpiece surfaces so they present a large surface for heat exchange (Ipsen, p. 3, ll. 20-22 and p. 5, ll. 24-26). In the case of long slender parts (workpieces) such as borer blanks, a tunnel can be formed, in which the upper plate sections form nozzle plates (plates 10), while the plate sections on the sides form cooling plates (cooling plates 11) (Ipsen, p. 4, ll. 21-24).

### C. Principles of Law

In order to establish a *prima facie* case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

### D. Analysis

The Examiner has not established by a preponderance of the evidence that Ipsen describes or suggests guide channels closed laterally such that the channels surround the workpiece or stack of workpieces in that lateral direction, i.e., the direction of flow of the quenching gas. Ipsen describes the cooling plates 11 as

“on the sides” or “opposite,” language suggestive of parallel plates. Figure 1 depicts only a cross-section of the cooling chamber. The cross-section shows parallel plates. Whether perpendicular plates are present as shown in Appellants’ top views (Figs. 3a and 4a), is unknown from Figure 1. The Examiner relies upon the disclosure in Ipsen of forming a tunnel. However, that disclosure tends to suggest that the furnace housing 2 is a long tunnel, its circular cross-section shown in Figure 1, the workpieces 4 being conveyed through the tunnel in a direction perpendicular to the cross-section. Again, this suggests that the cooling plates are parallel so as not to hinder the movement of the workpieces through the tunnel.

#### E. Conclusion

We conclude that the Examiner has failed to show by a preponderance of the evidence that Ipsen teaches or suggests guide channels as claimed to one of ordinary skill in the art.

#### V. DECISION

With respect to the rejection of claims 6 and 8-20 over Ipsen, we reverse the decision of the Examiner.

### REVERSED

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